

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

Overview

The reference laboratory interface project is a joint effort by Cimarron Medical Informatics (CMI) and the IHS Office of Information Technology (OIT) to develop a user friendly interface between commercial laboratory vendors and IHS laboratories to transmit and receive laboratory results using Virtual Private Network (VPN).

The uni-directional interface passes laboratory data from the reference laboratory to the Patient Care Component (PCC) database, if it meets all criteria of patient and test identification. The laboratory data transmitted to PCC via the interface is designed as a replacement for PCC data entry and provides an abstracted view of laboratory results suitable for health summary display, database searches, and clinical overview.

Generally, if your site does not have an on-site laboratory staffed by Medical Technologists or Medical Technicians, you are not using the RPMS Laboratory Package, and you **do not** plan on migrating to the Electronic Health Record this type of interface should suffice.

The bi-directional interface enables a facility to place lab test orders via the RPMS laboratory package or Electronic Health Record (EHR). Lab test orders are exported to the designated reference laboratory (i.e. Quest, LabCorp, etc.) when accessioned. Test results are released by the reference laboratory and are reviewed and verified using the Enter/Verify Data (Auto Instrument) option in the processing menu of the RPMS laboratory package.

Sites considering the bi-directional interface generally have an on-site laboratory staffed by Medical Technologists using the RPMS Laboratory Package and only send off a portion of their labs to a reference laboratory. Laboratory personnel should have adequate skills in the maintenance of the RPMS Laboratory package and should have attended the Basic Laboratory package training at some point previously.

Test results that are transmitted via bi-directional interfaces are available in all normal laboratory report options as well as from the PCC database and are viewable in the EHR.

Standard IHS software is used to completely manage the reference laboratory interface. Unlike some interfaces that may required additional software (such as Data Innovations Instrument Manager), this interface relies solely on the Generic Interface System (GIS) to manage it so no additional software, hardware, or licensing is required.

Items to consider before implementing the interface

Implementation of the interface is a complicated and time-consuming set of tasks. Based on our beta site training and implementations, it took an average of six to ten weeks for each beta site to go live on the reference laboratory interface. Sites that went live the fastest (six weeks) had most of their lab tests already built in the laboratory file 60 of RPMS, leaving only a few remaining steps to perform in order to complete the implementation.

We also found that there was significant time involved in establishing connectivity between individual sites and their respective reference laboratories. Quest, LabCorp, RML, Sonora Quest, et al had to ramp up their staffs, and networking personnel were not always available when needed.

Networking personnel on both sides of the interface (the commercial reference lab side and the IHS side) need to coordinate their efforts and exchange IP addresses and port numbers, as well as managing security and other issues, and that takes time.

Other factors to consider are:

- How competent is your lab staff in using the RPMS lab package?

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

- Has the person that will be in charge of the interface attended basic lab package training?
- Are you now in contact with your reference laboratory service representative and can they supply your site with information necessary to begin the reference lab "mapping" process? Information such as utilization reports and a test compendium listing the reference lab's order and result codes is needed to map individual tests.

The reference lab interface training class will be limited to training on the interface and will not cover basic lab package training topics. Those items are covered by the basic lab package training class.

The interface training sessions will allow sites to:

- be trained on reference lab interface file setup,
- log into their systems and begin setting up their databases during training, and
- turn on the GIS interface and begin to configure their systems during training.

The above items cannot be done without the sites having completed the tasks listed later in this document.

Why are most of the training sessions taking place in Albuquerque?

Most of the training sessions will be held at the Albuquerque OIT training room for various reasons, most notably the presence of OIT networking personnel that can assist with VPN connectivity problems should they arise.

CMI will be teaching the reference lab classes. During training, participants will be working on their RPMS systems at their respective sites. If technical problems arise it will be difficult to troubleshoot VPN problems without the help of OIT networking specialists. By having the training in Albuquerque, we will have direct access to the VPN support at OIT, which should expedite the troubleshooting process.

What to do to prepare for the interface

The first thing you should do is review your area's contract with the commercial laboratory to make sure the lab interface is part of your agreement. If not, you may need to negotiate inclusion of an electronic interface with the reference lab.

Once you have determined that your contract includes an interface with the lab you should inform your client services representative of your interest in implementing an electronic interface, whether uni-directional or bi-directional. At this point, you should also request that the reference lab send you a test utilization report and test compendium which you will need to enter your labs into the RPMS laboratory package.

The client service representative at the reference lab will take the appropriate steps to have this process begun on the reference lab side. Generally an interface project manager is also assigned by the reference lab to manage this project for the lab.

Some of the basic information that the reference laboratory will need is:

1. The account number(s) for the site(s)
2. The contact information for the primary person at the site that will be involved with the implementation.
3. The contact information for the other persons involved with the implementation, such as the OIT Telecommunications staff, the Area Telecommunications staff, and the staff who are providing other support, such as CMI staff.
4. The IP address for the site.

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

5. The software version to be installed. In this case IHS Laboratory Package 5.2 Patch 21.

In most cases your site will be asked by the client service representative to complete a project request form. You should also expect the reference laboratory's project manager to send you a copy of their project plan. This will help you to coordinate and schedule your resources with the reference labs.

Preliminary work that your site can do to prepare for the interface is to make sure that your labs are entered into the laboratory package. You will need a test utilization report and a test compendium from the reference lab so you can begin to add tests into the Laboratory Test file (file 60) based upon those reports.

The laboratory package needs to be upgraded to the most current release, which is patch 21. This patch can be installed without turning on the reference lab interface, and most sites are already loading patch 21 because it contains other laboratory package "fixes" independent of the reference lab interface. The Generic Interface System (GIS) must also be upgraded to its most current release, which is version 3.01 patch 14.

OIT will need contact information from the sites that will be attending the training. Contacts should include the:

- site manager,
- lab manager,
- CEO,
- Area VPN coordinator, and
- Area director (or someone at the area level that you think should know that we are embarking on this project).

Please send this contact information to Lisa Petrakos at lisa.petrakos@ihs.gov

During the training sessions, CMI will have users log into their own RPMS databases and begin the tasks necessary to implement the interface at their own sites(s). Because of this, there is a list of tasks that the sites must complete before attending a training session. A complete list of tasks is provided on the following pages of this guide.

Items that must be completed prior to attending the training session have been indicated by putting a "▶" next to the task.

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

Steps for implementing the Reference Lab Interface

Pre-Training

Important Note: Items marked as  must be completed prior to attending training.

	Tasks (* indicates IT or Site Manager may be needed to complete the task)	Done?
	Have you notified the Area, your CEO, and IT personnel of your plans to implement the Reference Lab Interface?	
	Have you reviewed your area's contract with the commercial laboratory vendor?	
	Does it include (or have you negotiated for) a provision for an interface between the commercial lab and your reference lab application?	
	Do you know how you will be using the interface (uni-directional or bi-directional mode)? See frequently asked questions section to determine if your site should be uni-directional or bi-directional.	
	Have you or someone from your staff attended a Basic and/or Intermediate Lab Package Training event?	
	Have you provided the name and contact information of the RPMS site manager, lab manager, CEO, Area VPN coordinator, and Area Director to the project coordinator? (Send an e-mail to Lisa Petrakos at Lisa.Petrakos@ihs.gov .)	
	Have you established a Lab POC at your site?	
	Have you established a POC at the Reference Laboratory?	
	Have you provided the name of the reference laboratory, account number(s), name and contact information, and your site's RPMS server's IP address to your client service representative? (The reference laboratory will probably send you a project request form to fill out and return.)	
	Have you sent your site's RPMS access forms to the contracting staff? (Send forms to Dorothy Russell at DRuss4440@aol.com , Karen Mundy at Karen@Mundy.com , and Mark Williams at markatcmi@acsalaska.net .)	
	Have you provided the Reference Lab Project Manager and Reference Lab IT contacts (including name, number, email, etc.) to the project coordinator? (Send an e-mail to Lisa Petrakos at Lisa.Petrakos@ihs.gov .)	
	*Have you contacted your Area VPN coordinator to have your site's RPMS server's IP address added to the VPN tunnel of the Reference Lab you intend to use?	
	Have you signed up for the Reference Lab Implementation training? Contact David White at david.white@ihs.gov for registration information. For a list of training sessions currently scheduled click here: http://www.ihs.gov/cio/rpms/index.cfm?module=Training&option=hhsTrans&sortChoice=Date&newquery=1	
	 Are you running RPMS Lab 5.2?	
	 *Have you installed Reference Lab patches up to patch 21?	
	 Are you running GIS version 3.01?	
	 *Have you installed GIS patches up to patch 14?	
	 *Have the security keys, BLRZMENU and BLRRLZ been allocated to all class participants after installation of the patches?	
	 *Has the GIS menu (GIS INTERFACE MENU) been added to the BLRREFLABMENU at all participating sites?	
	 *Have you set up user accounts for Dorothy Russell, Karen Mundy, and Mark Williams on your RPMS systems so that they can assist the site during training sessions? Note that Dorothy, Karen, and Mark will also need RPMS Programmer access to your RPMS database.	
	Have you requested a test utilization report for your facility for the last year, and a compendium of tests for your facility from your reference laboratory client representative?	
	 Have you received the utilization report and test compendium report from the lab?	

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

	Tasks (* indicates IT or Site Manager may be needed to complete the task)	Done?
▶	Do you know your site's RPMS IP address? (You must bring it with you when you attend the training session.)	
▶	Has the Reference Lab POC or client account representative submitted a project plan so you can coordinate your schedules?	
▶	*Have you confirmed that you have been added to the VPN tunnel successfully?	
	*Have you returned the project request form to the Reference Lab?	

Pre-Implementation

	Tasks (* indicates IT or Site Manager may be needed to complete the task)	Done?
	*Did you set up a mail group in RPMS to receive error bulletins (uni-directional only)?	
	*Did you configure the Task Options to purge the data files?	
	Did you map all the laboratory tests (Laboratory Test file 60) listed on the test compendium that have been ordered at least three times per year as listed on the compendium?	
	Did you map BLR Reference Laboratory file (bi-directional and uni-directional) including "ask-at-order" questions?	
	Have you updated the Load/Worklist file (bi-directional only)?	
	Did you update the Auto Instrument file (bi-directional only)?	
	Did you update the IHS Lab CPT code file (bi-directional only)?	
	*Have you tested the connectivity between your site and the Reference Lab?	
	*Have you submitted your VPN connectivity details to the OIT Network staff?	

Steps to complete before moving the Reference Lab Interface into Production

Pre-Production

	Final Testing	Done?
	Have you completed your System Acceptance Testing to validate your mapping? (Preset scenarios of tests ordered at least three times in the last year on Demo Patients. Testing should confirm the accuracy of the test mapping, the communication stability, and the overall process. The test should take approximately 2 weeks to complete.)	
	Have you made arrangements for conversion to production (including changes in IP addresses and port settings)?	
	Have you reviewed the training checklist with your staff to assure that all affected staff will know how to order, accession, deal with ask at order questions, reprint shipping manifests, label specimens, deal with add-ons and cancellations, etc?	
	Are you ready to monitor and troubleshoot communication and data mapping problems that may occur once you are in production?	
	Did you notify the OIT Help Desk Rep after moving the Reference Lab Interface into production?	

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

Frequently Asked Questions

1. Does the Electronic Health Record work with the uni-directional interface?

No, the uni-directional interface is designed to bypass the RPMS Laboratory package and input laboratory results directly into the Patient Care Component (PCC) of the RPMS system. The laboratory data transmitted to PCC is designed as a replacement for PCC Data Entry and provides lab results through the Health Summary and database searches such as Q-Man. Since the uni-directional interface bypasses the RPMS Laboratory package, test results are not viewable using EHR.

2. Does the Electronic Health Record work with the bi-directional interface?

Yes. Facilities using the RPMS Laboratory system will be able to place laboratory orders using the EHR. When those orders are accessioned in the laboratory package, they are sent as an electronic file to the designated reference laboratory. Test results are then received, reviewed, and verified using the RPMS Laboratory package. Test results are then available in all normal laboratory report options and are viewable in the EHR.

3. Our site currently uses the uni-directional interface, can we upgrade to the bi-directional version?

Yes. A site can convert to the bi-directional interface; however there are some factors to consider. First your site will have to plan on utilizing the RPMS laboratory package. OIT highly recommends sending laboratory personnel to Basic Laboratory package training to familiarize them with the lab package. OIT also recommends that users attend Reference Laboratory Interface training to learn how to setup and maintain a bi-directional interface once activated.

4. How long does it take for a site to become interfaced?

Based on OIT experience with beta test sites, it takes approximately 6-10 weeks once a site makes the decision to pursue implementing the reference laboratory interface. Reasons for this include staffing, communication with the reference laboratory, resource issues on the reference laboratory side, test creation, test mapping, etc.

5. Who should attend training?

Individuals who are responsible for the maintenance of the RPMS laboratory package training should attend. In addition, in their absence a person of similar capabilities should also attend and they will serve as backup to the primary lab package administrator.

6. Should IT people also attend the training?

Almost all of the setup and maintenance of the reference laboratory interface will be performed by laboratory personnel. Tasks such as building data names, building test files in File 60, etc., are performed primarily by laboratory technicians familiar with the laboratory package. If a site manager is interested they are welcome to attend but past experience is that most site managers will not be interested in the material after the first day of training.

7. When setting up tests in F60, is it required that we have entries in Site/Specimen and Collection Sample fields for the bidirectional interface?

Those fields are required for tests that are type "both." Tests that are "output" only, because they are members of a panel, need a site/specimen (so that you can define units

RPMS Reference Lab Interface Prep Guide

Site guide to prepare for training and implementation

and LOINC codes) but do not need a collection sample, as the collection sample will be chosen when the parent test is ordered. Type "input" tests do need collections samples defined.

8. For a site that may be doing some in-house testing, should I have different Urine Glucose, Urine Protein, etc., for the reference lab results?

I would as they may eventually go to a bidirectional interface and the way the results or the units are reported may not be the same. For example on site, they may report urine dipstick results using the "+" system whereas the ref lab uses semi-quantitative, e.g. 30, 100, 200 mg/dL.

9. Is the Institution and Accession area entry needed for every test or just the Cosmic tests?

For bidirectional interfaces, the Institution and Accession area are required for type "Input" and type "Both," but are not required for type "Output" as the parent test that is ordered will define the Institution and Accession Area for all tests in that panel.

10. Each result must have a data name. Is a Glucose a Glucose a Glucose, or do we have to have a unique Glucose data name for every type of Glucose (result code) there is?

Yes, if a reference lab defines a test with a separate result code, then we must create a separate test complete with a separate data name in the Laboratory Test file. That means that the reference lab does not equate those tests for some reason. It is the Data name that the Laboratory Package uses to file the result.